IN THE SPECIFICATION

Please amend the Substitute Specification as follows:

Please replace paragraphs [0005] through [0007], with the following rewritten paragraphs as follows:

-- ~~SUMMARY OF THE INVENTION~~

[0005] In the future, it is expected that data traffic will increase, and consequently, still larger-capacity switches for supporting higher-speed lines will be required. On the other hand, if links to access port of networks and compatibility with conventional equipment are considered, it will be necessary to support conventional low-speed lines as well.

[0006] FIG. 4 shows an example of a switch structure. A crossbar switch 850 comprises a plurality of input ports and a plurality of output ports sized in 40-Gbps units, and switches up to n x n connections between the input and output ports. The crossbar switch 850 and line interfaces ~~820~~ 821-824 are physically interconnected by a 40-Gbps driver (transmitting unit) 830 and a 40-Gbps receiver (receiving unit) 831. Especially in large capacity switches of several hundreds-Gbps to several-Tbps classes, physical connections between the crossbar switch 850 and the line interfaces may be realized by optical components, such as optical interconnecting modules. Based on the same concept as in FIG. 3, the switch shown in FIG. 4 supports not only a 40-Gbps line interface, but also various types of lower-speed lines. Although the crossbar switch 850 has a capability of switching in units of 40-Gbps, it is practically impossible, for example, to support sixteen 2.4-Gbps lines or forty gigabit-Ethernet lines in one line interface, because the increase

of the components restricts the mounting area of the line interface. Therefore, the number of 2 .4-Gbps lines is limited to around eight (line interface 823) and the number of gigabit-Ethernet lines is limited to around eight (line interface 824), resulting in low capacity densities of the line interfaces. In this case, it would be redundant to use the 40-Gbps driver 830, the 40-Gbps receiver 831, or the optical interconnect module for connections between low-capacity-density line interfaces and the crossbar switch 850, and this would also be undesirable from the viewpoints of the mounting area and the cost of the parts. This problem is caused not by the speeds of the driver and receiver shown in FIG. 4 or the speeds of the lines being accommodated, but generally by mixed accommodation of high-speed and low-speed lines in one switch.

[0007] A conventional input-output buffer type crossbar switch as described in document 1 performs switching between input and output ports on a one-to-one connection basis. Therefore, if there are a plurality of low-speed line interfaces and a plurality of high-speed line interfaces and they are all connected to the crossbar switch, it is impracticable to provide a connection from a certain high-speed line to a plurality of low-speed lines at one time, or a connection from a plurality of low-speed lines to a high-speed line. Therefore, the utilization efficiency of the switch may be lowered significantly. In other words, conventional crossbar switches do not support one-to-many or many-to-one connections between input and output ports, so

mixed usage of low-speed and high-speed line interfaces may cause a so-called "blocking" phenomenon, in which data cannot be sent out from the switch even though the desired output port is available.

SUMMARY OF THE INVENTION --.